

Does a Tattoo Protect Against Chronic Spontaneous Urticaria? An Unusual Finding

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Citation: Bojahr K, Sztramska A, Zysk W, Rolewicz A, Romantowski J, Chelmińska M. Does a Tattoo Protect Against Chronic Spontaneous Urticaria? An Unusual Finding. *Dermatol Pract Concept*. 2024;14(3):e2024172. DOI: <https://doi.org/10.5826/dpc.1403a172>

Accepted: March 14, 2024; **Published:** July 2024

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Funding: None.

Competing Interests: None.

Authorship: All authors have contributed significantly to this publication.

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Case Presentation

A 28-year-old man was diagnosed with chronic urticaria with angioedema 15 years ago. The symptoms have been present since early childhood, but he was treated ad hoc without detailed diagnostics. According to the Urticaria Activity Score scale, the patient had 5 scores during the last 24 hours since the interview. The patient has four black, decorative tattoos; the first of them was made 11 years ago. They all cover ~1%–5% of the body surface and are located on the right and left forearms. The patient reports that the presence of tattoos had an impact on reducing the occurrence of wheals in tattooed areas; urticarial wheals appear with much less intensity compared to other places (Figure 1, A and B).

Teaching Point

Current scientific literature focuses on tattoo-associated cutaneous complications, however, there are limited therapeutic benefits related to tattoos [1,2]. Previous reports indicated a positive effect of tattoos on psoriasis, described

as a tattoo-sparing phenomenon [1]. We presented the unusual description of the possible positive effect of tattoos on urticaria. The mechanisms of the “tattoo-protection” phenomenon observed above remain hypothetical. Among the potential causes are changes in local microcirculation, modifications in immunity, and the abundance of pigments available peri-vascularly, preventing the inflammatory process [2]. Tattoos, among other types of traumas, might be the cause of regional immune dysregulation [3,4]. Our case report appears to fit the reverse Koebner reaction (Renbök phenomenon), which is the non-appearance or disappearance of the dermatoses at the site of injury. Caccavale et al have proposed tattoos as one of the causes responsible for the reverse Koebner reaction [4]. According to the classification proposed by Caccavale et al, the patient described above may be considered an example of *locus maioris resistentiae*, an area of skin with greater resistance to certain reactions [4].

Macrophages are the main effector cells in the pathophysiology of tattoos, phagocytose, and deposit most of the tattoo pigment [1]. Spyridonos et al suggested that



Figure 1. (A,B) Sparing phenomenon in the patient (A) on the right forearm and on the (B) left forearm). An area free of urticaria surrounding a tattoo can be seen (red arrows).

macrophages might play an important role in “sparing phenomena” in psoriasis [1]. Macrophages also emerge as a cell species in the pathophysiology of urticaria, which may be a potential explanation for the occurrence of this phenomenon in urticaria as well. Further studies might not only explain this connection but may also shed new light on urticaria pathogenesis.

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